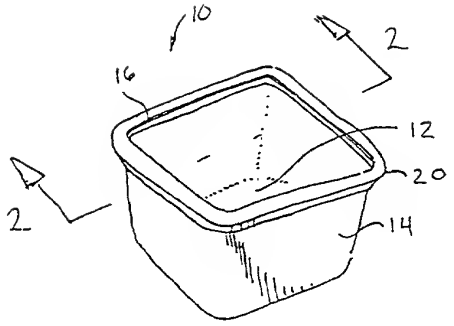


Fig. 1

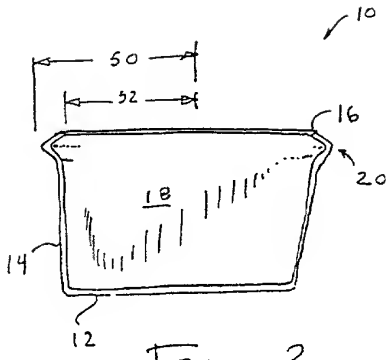


Fig. 2

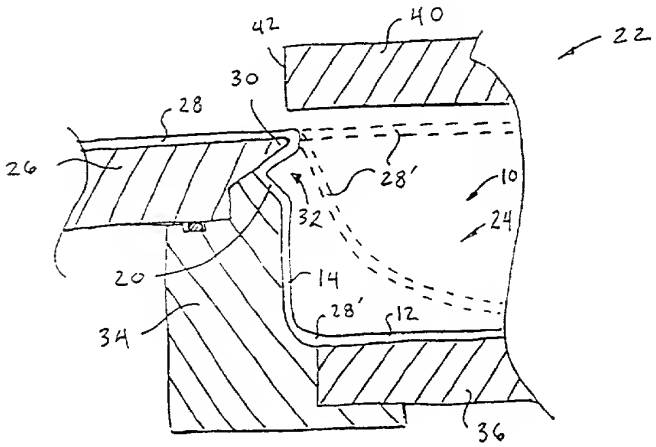


Fig. 3

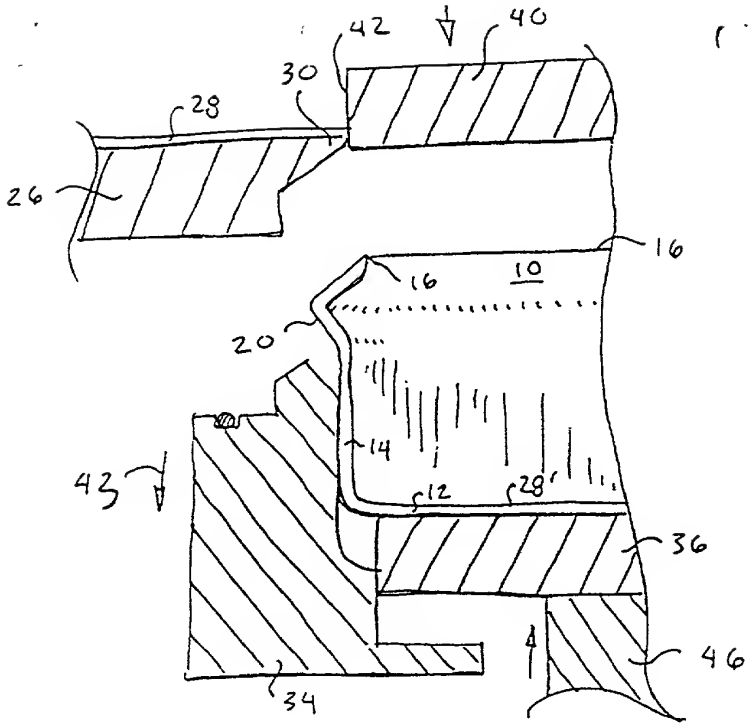


Fig. 4

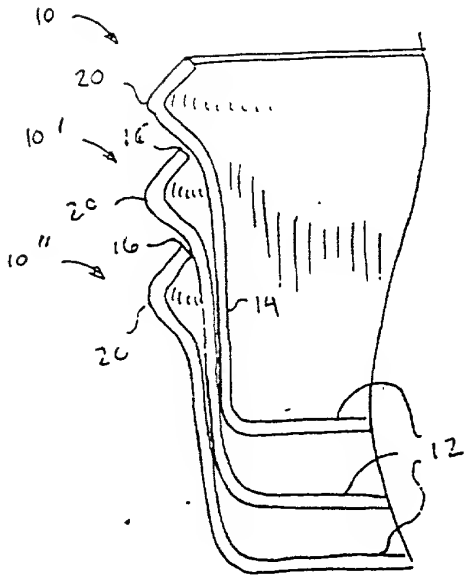


Fig. 5

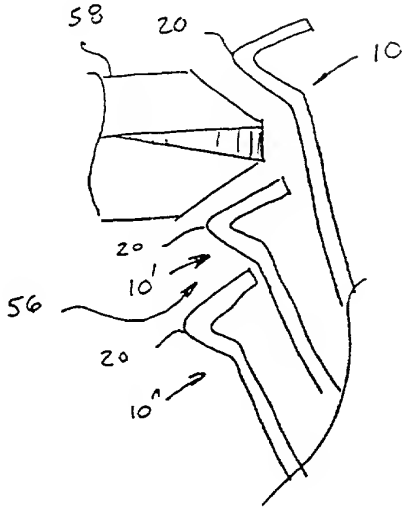


Fig. 6

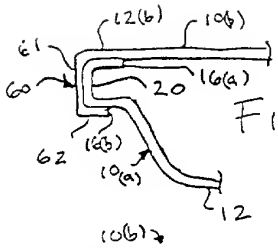


Fig. 7

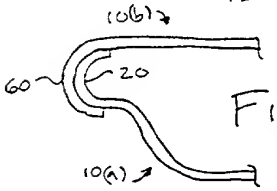


Fig. 8

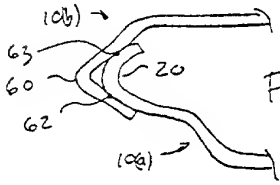


Fig 9

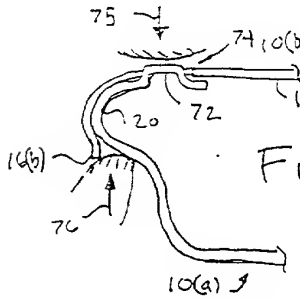


Fig. 14

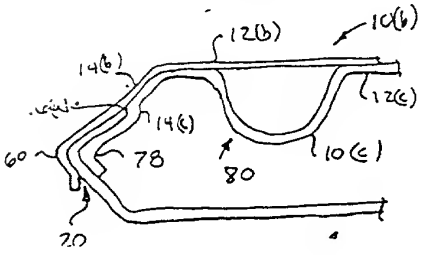


Fig. 15

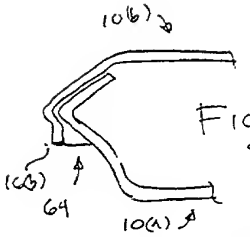


Fig. 10

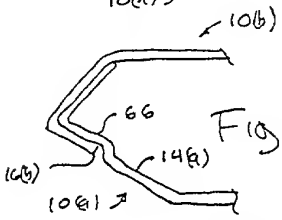


Fig 11

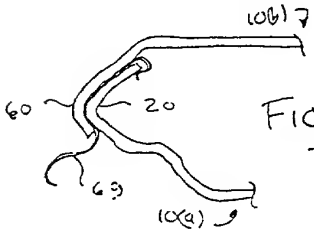


Fig. 12

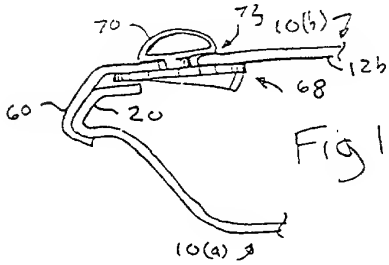


Fig 13

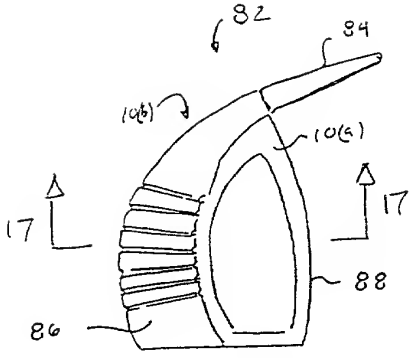


Fig 16

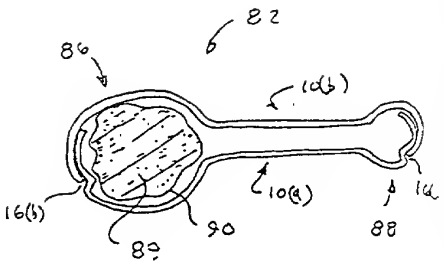


Fig 17

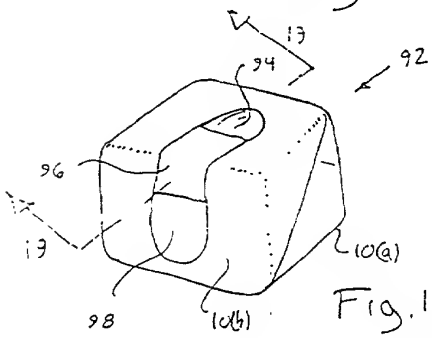


Fig. 18

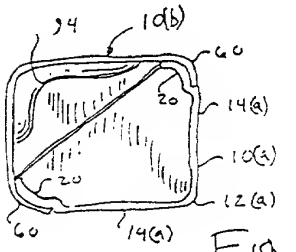


Fig 19

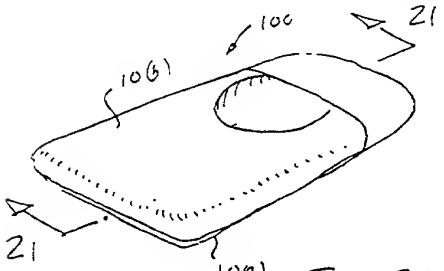


Fig 20

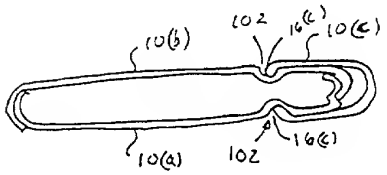


Fig 21

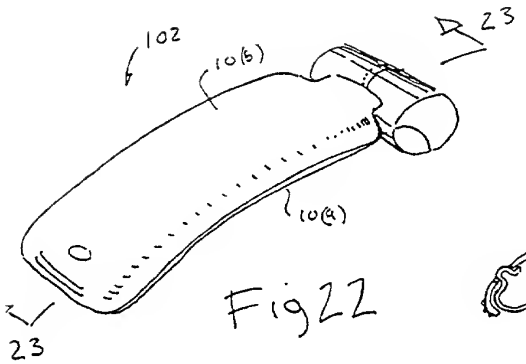


Fig22

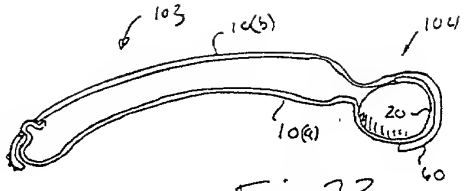


Fig.23

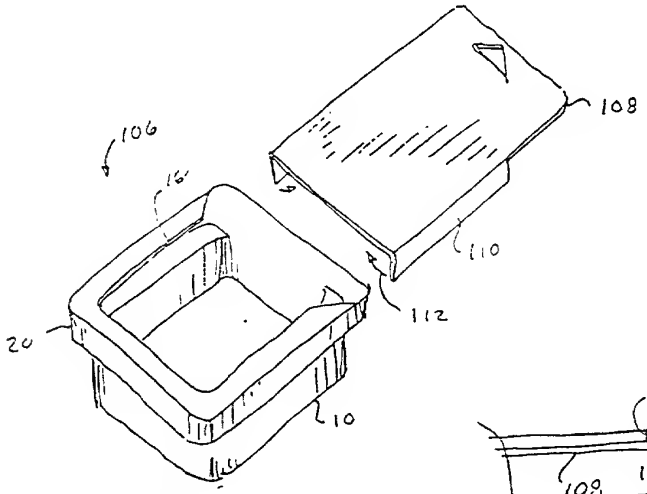


Fig 24

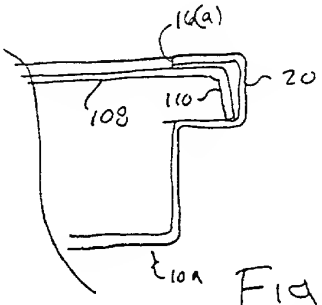


Fig. 25

Robert J. Boone 4/17/00

1. A HEATED PLASTIC SHEET IS INDEXED INTO A POSITION OVER THE UPPER MOLD HALF.

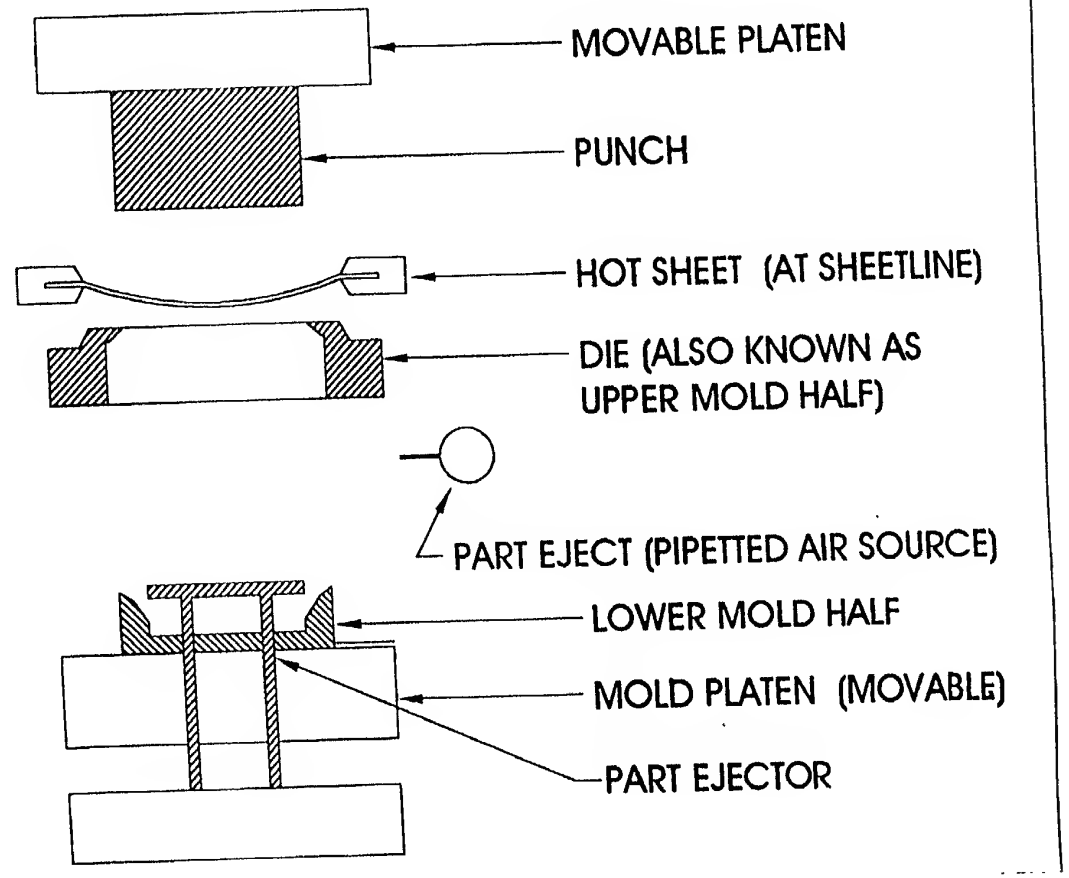


FIG. 2A

6/23

Ronald D. Barr 4/17/00

2. THE LOWER MOLD HALF IS RAISED TO COMPLETE BOTH TOP AND BOTTOM OF MOLD CAVITY.

OR PERFORM IN DIFFERENT SEQUENCE.

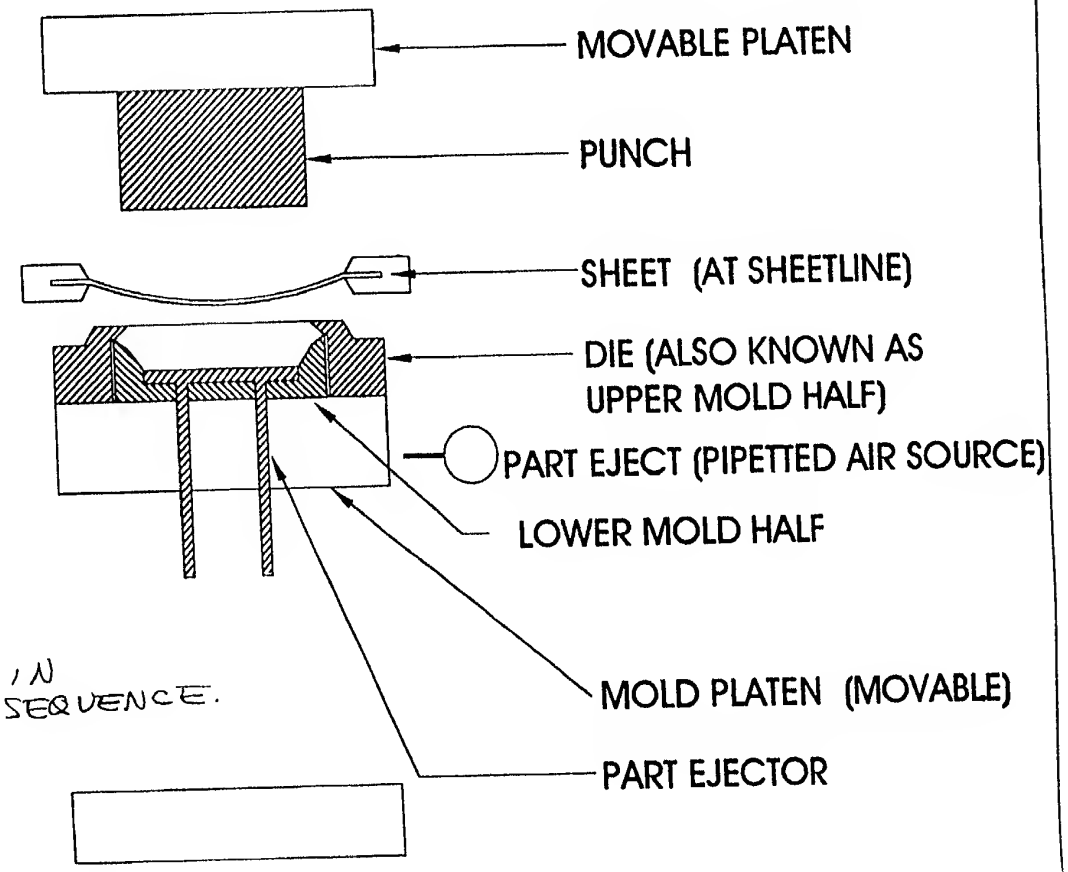
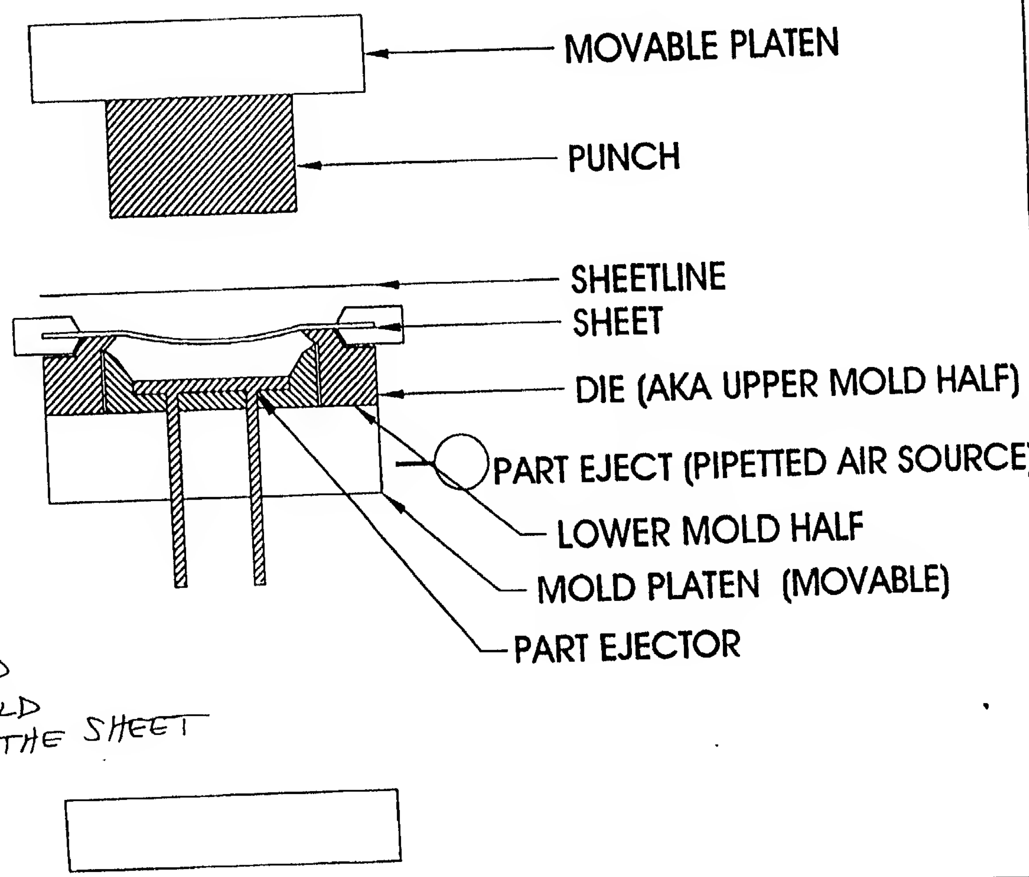


FIG. 7

7/23

Robert D. Baum 4/17/00

3. THE HEATED SHEET IS LOWERED TO CONTACT THE TOP SURFACE OF THE UPPER MOLD HALF



OR THE MOLD SECTION COULD MOVE UP TO THE SHEET

FIG. 28

4/17/00

4. THE SHEET IS DRAWN INTO THE MOLD BY EITHER (OR BOTH) PRESSURE AND/OR VACUUM. THE SHAPE OF THE MOLD CAVITY IS DUPLICATED IN THE THERMOFORMED PLASTIC SHEET.

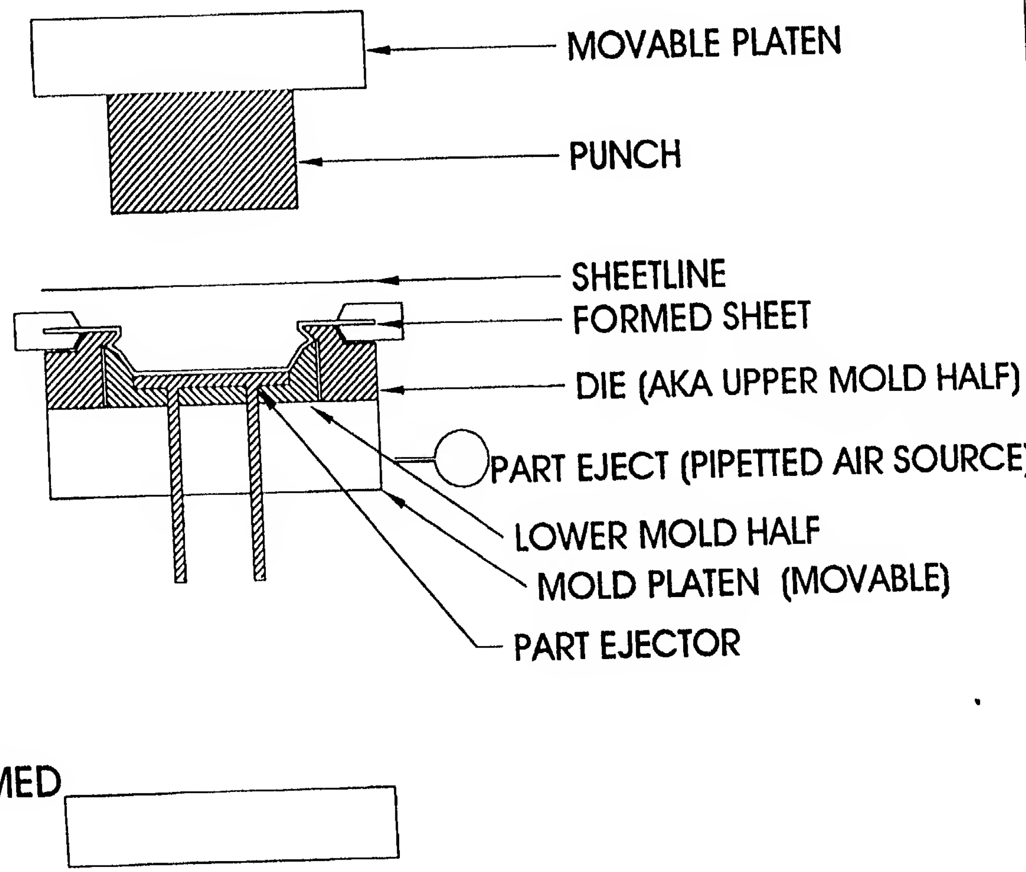
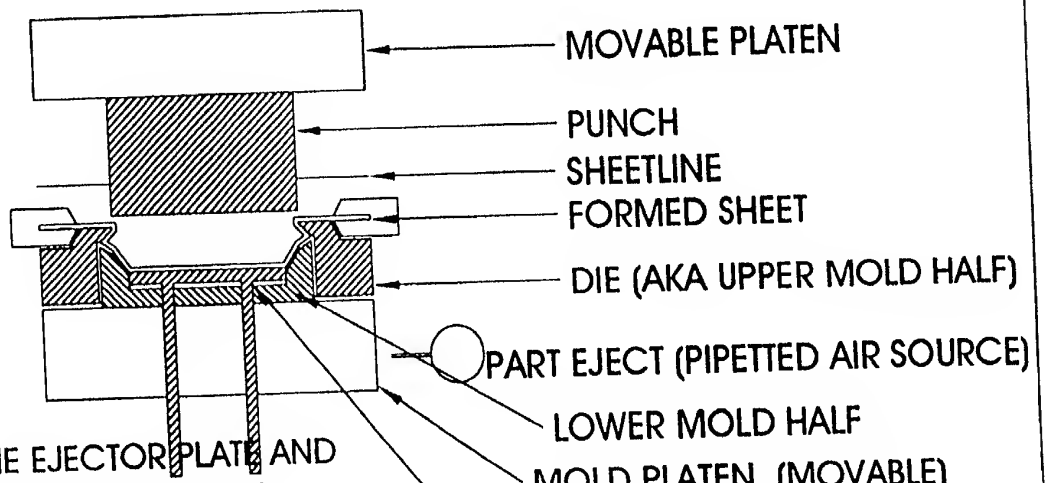


FIG. 29

4/17/00

5. THE PUNCH MOVES TOWARD THE SHEET AND AT THE SAME TIME THE LOWER MOLD HALF MOVES DOWN, SO THAT THE PART WILL NOT BE CRUSHED DURING THE PUNCHING OF THE PART



THE EJECTOR PLATE AND NEWLY FORMED PART MAINTAIN CONTACT WITH THE AID OF ~~VACUUM. THE PLATE~~ MOVES FREELY UP, AND HOLDS ~~THE PART.~~

LOWER MOLD HALF COULD MOVE UP/DOWN BY AN AIR CYLINDER TO CREATE SPACING.

WO FIG.

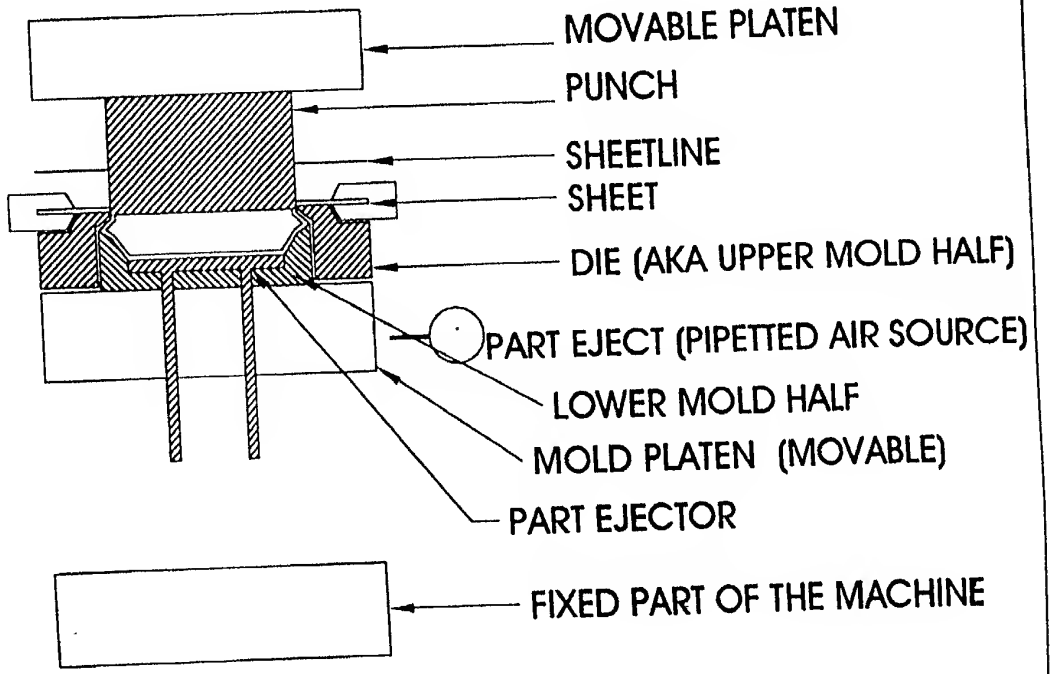
10/23

4/17/00

6. THE PUNCH CONTINUES TO MOVE DOWN AND PUNCHES THE FORMED PART OUT OF THE WEB. THE EJECTOR VACUUM IS STILL ON AND CONTINUES TO HOLD THE PART ON THE EJECTOR PLATE AND IN THE LOWER MOLD.

OR MOVE MOLD AND DIE UP TO THE PUNCH.

FIG. 5A



11/23

4/17/00

7. THE LOWER MOLD HALF MOVES DOWN TO CARRY THE PART BELOW THE UPPER MOLD HALF, SO THAT THE PART MAY BE REMOVED.

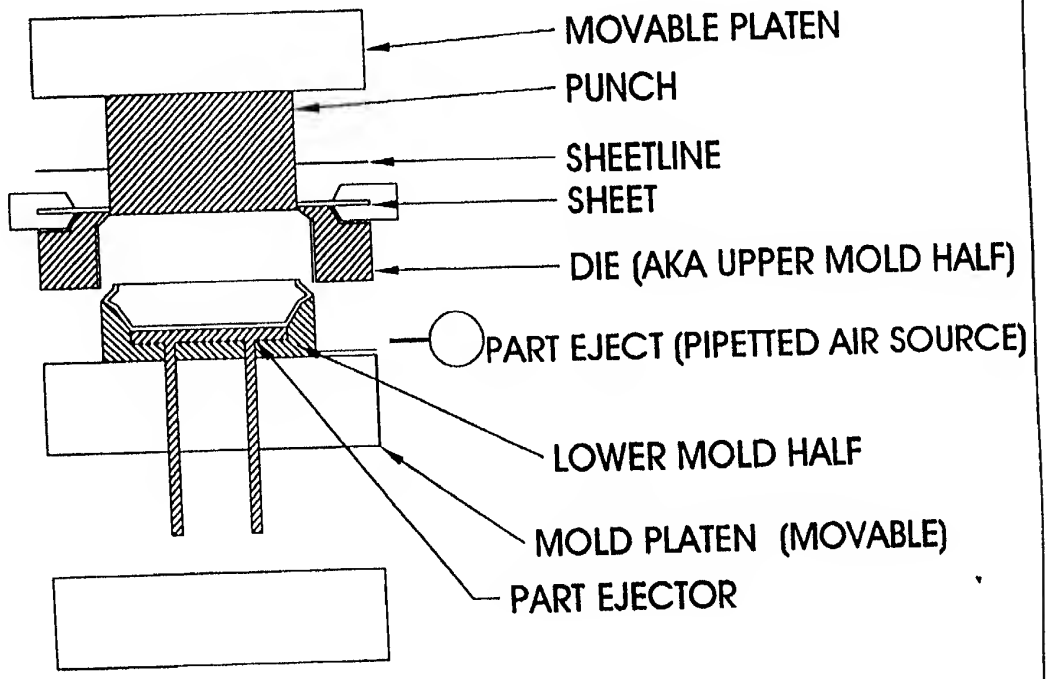


FIG. 32

12/23

8. THE LOWER MOLD PLATEN CONTINUES TO LOWER. THE FREELY MOVING EJECTOR PLATE IS STOPPED BY IT'S GUIDE-RODS STRIKING A FIXED SURFACE OF THE MACHINE.

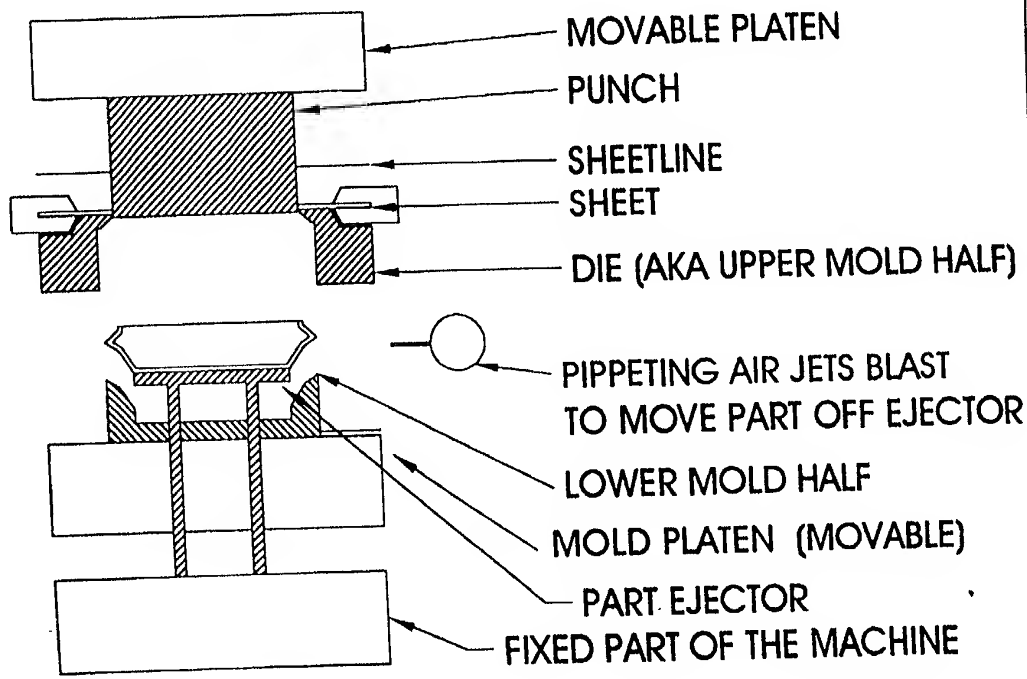


FIG. 33

04/17/00

04/17/00

9. THE VACUUM ON THE EJECTOR PLATE GOES OFF AND THE PART IS BLOWN OFF OF THE EJECTOR PLATE.

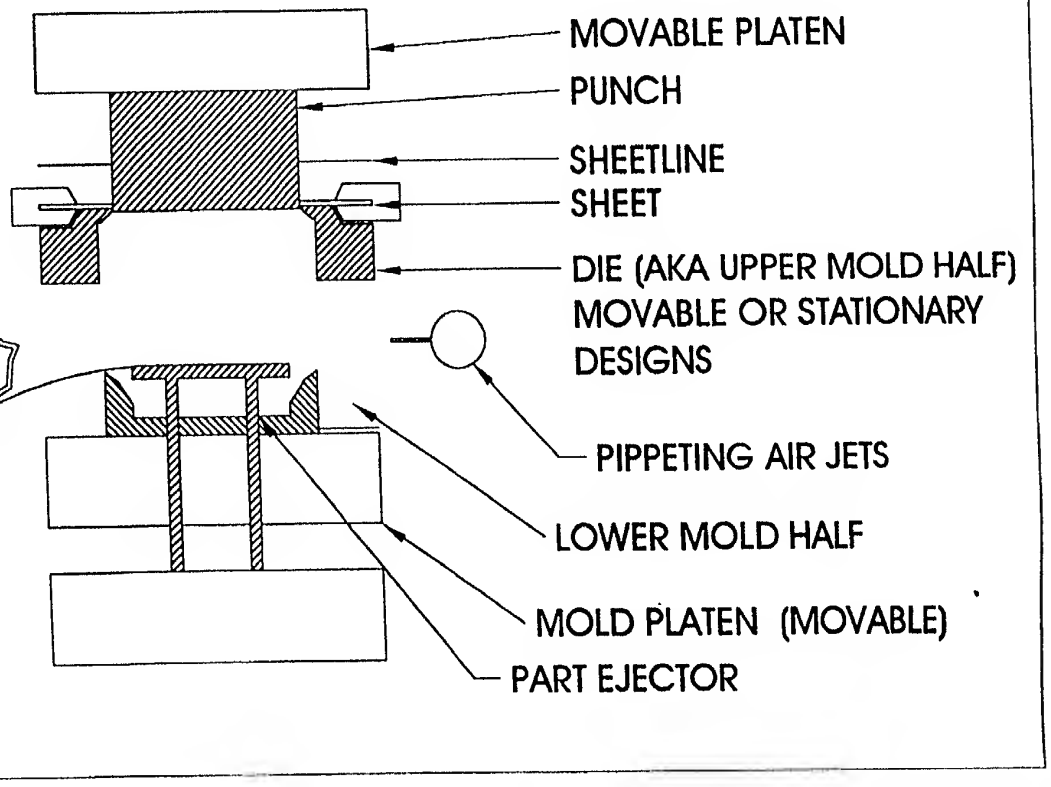


FIG. 34

Peter D. Bonn 04/17/00

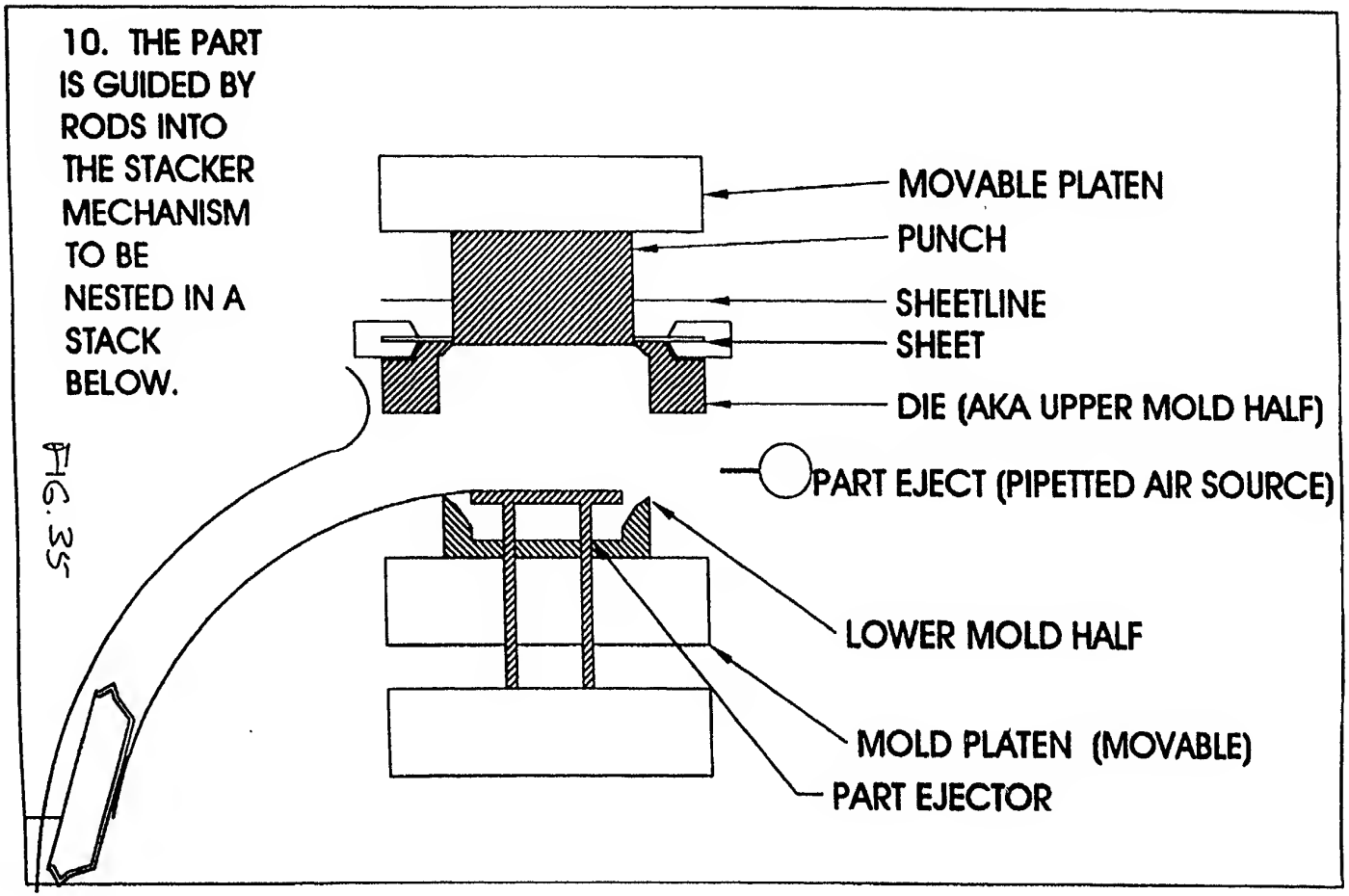


FIG. 35

04/17/00

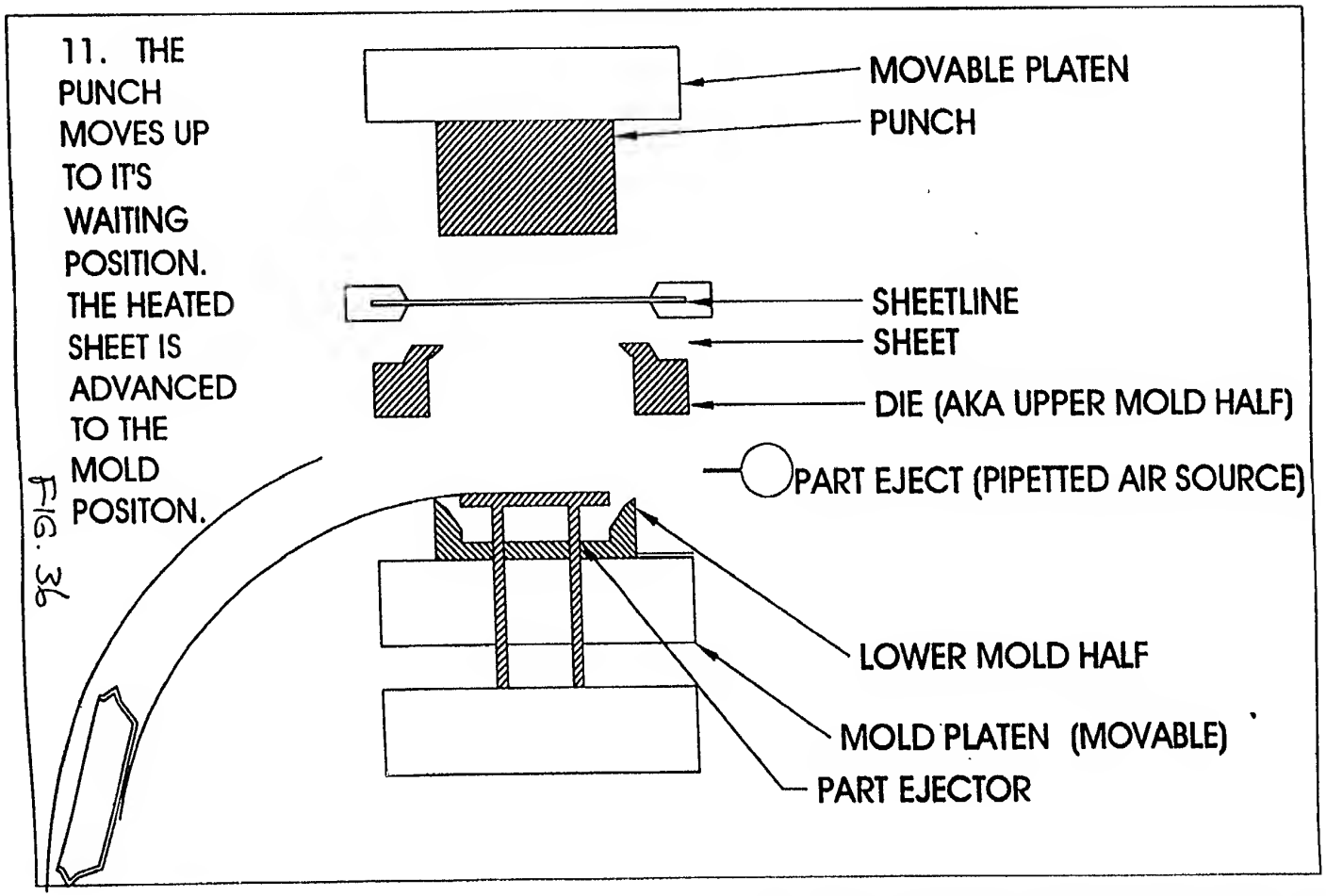


FIG. 3b

Robert D. Bean 04/17/00

12. THE PART IS INDEXED FOR AN IN-LINE OPERATION, SUCH AS PUNCHING HOLES, OR PRINTING; OR PUSHED INTO A STACK FOR FINAL PACKAGING.

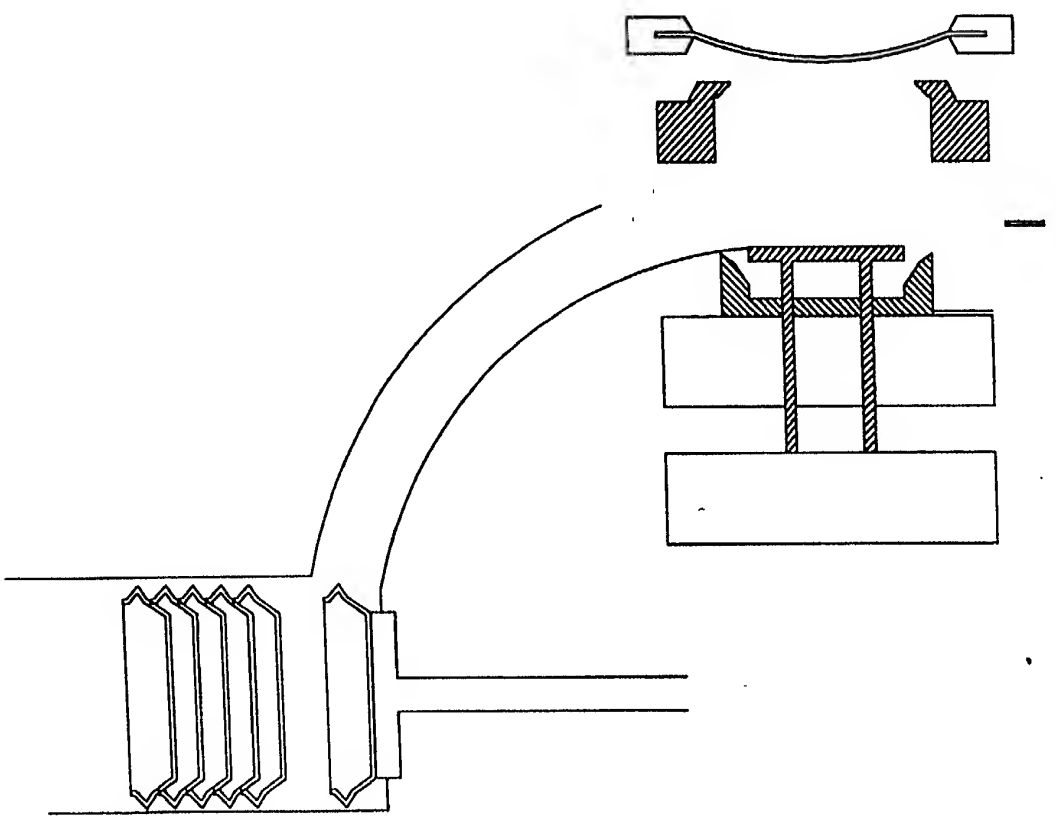
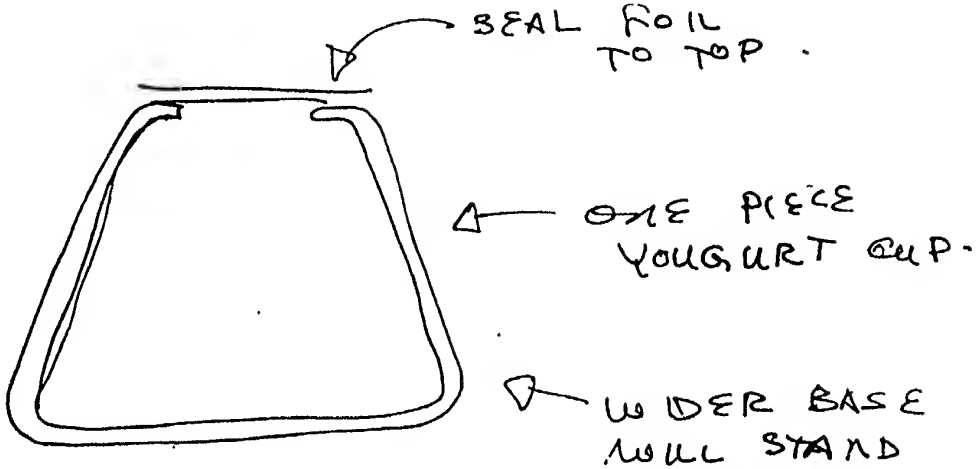


FIG. 37



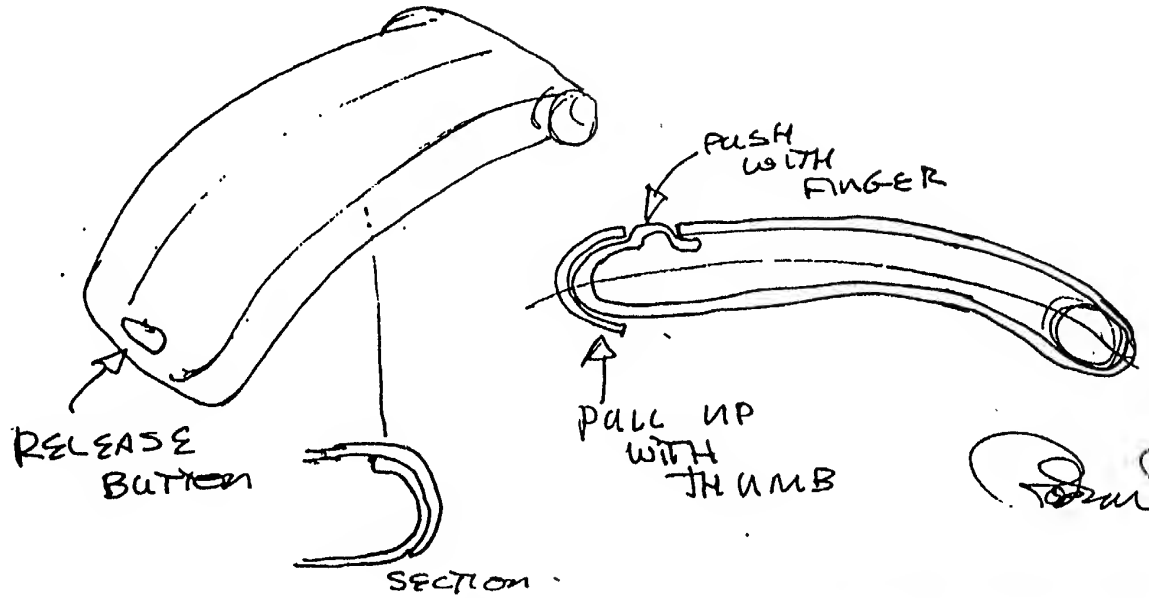
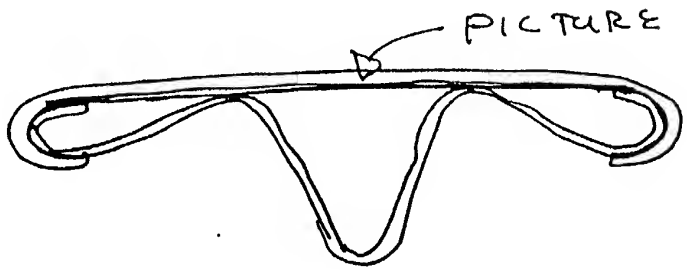
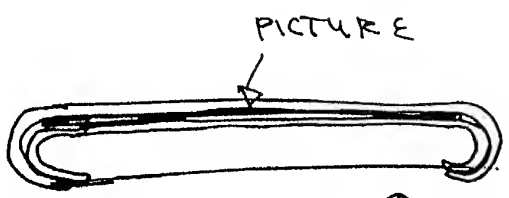


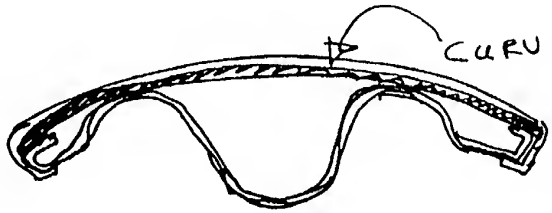
FIG. 2A.

4/17/00

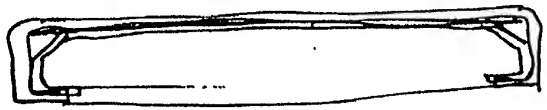


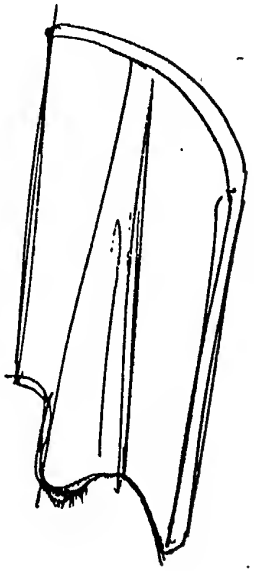


BACK WILL HANG ON NAIL HEAD.



PICTURE FRAME

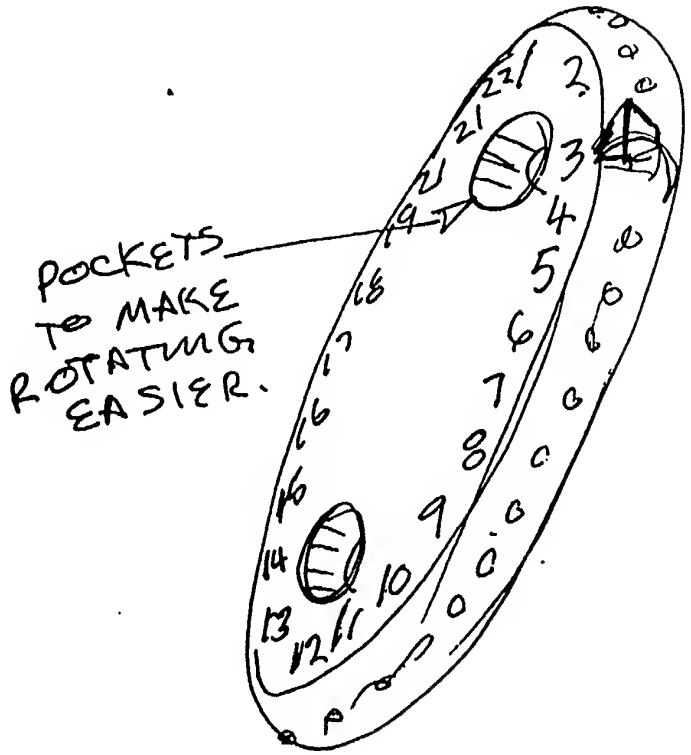




PIX-U-FRAME.

FIG. 9.

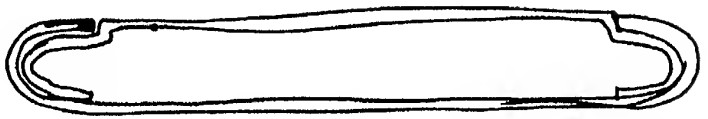
04/17/00



← ROTATING MALVES FOR COUNTER.

← DETENTED FOR SNAP

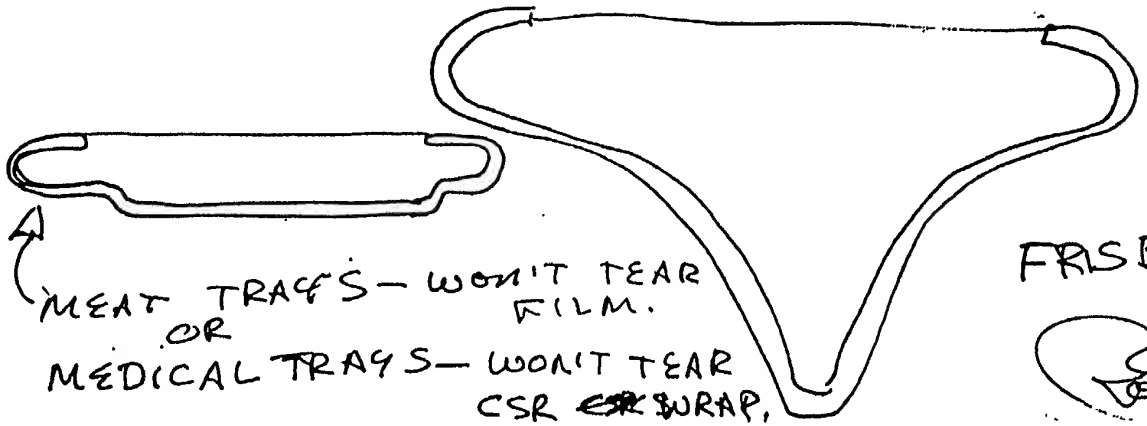
- COUNTER FOR PLAYING GAMES SCORING.
- COUNTER FOR GOLF, CARDS, ETC.
- COUNTER FOR WEIGHT WATCHERS "POINTS" COUNTER.
-



Robert D. Bax 04/17/00

FIG. 4D

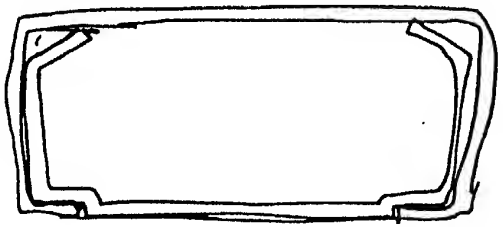
20/23

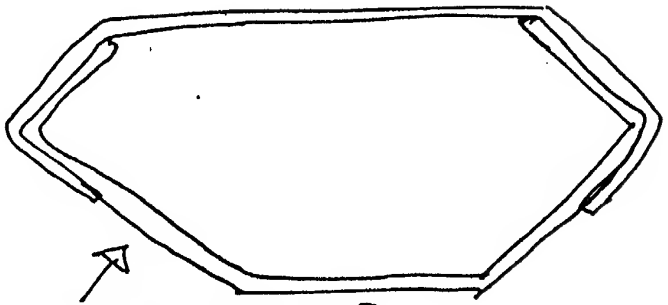


MEAT TRAYS — WON'T TEAR FILM.
OR
MEDICAL TRAYS — WON'T TEAR CSR ~~CSR~~ WRAP.

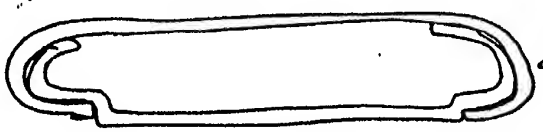
FRISBEE/TOP

4/17/00



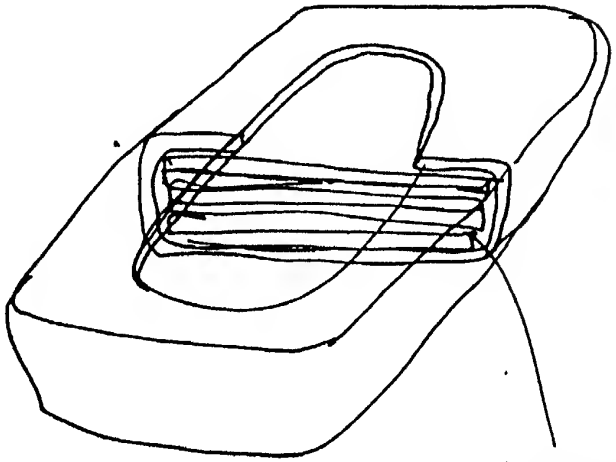


DIFFICULT TO OPEN FOR TAMPER RESISTANT.

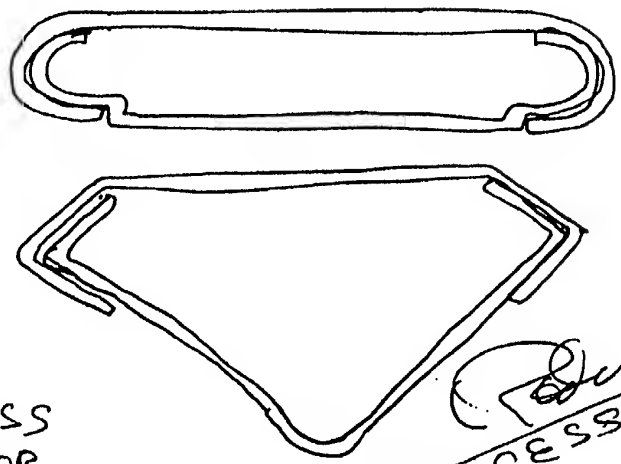


SNAP-TOGETHER HOUSINGS FOR ELECTRONICS.

FIG. 11

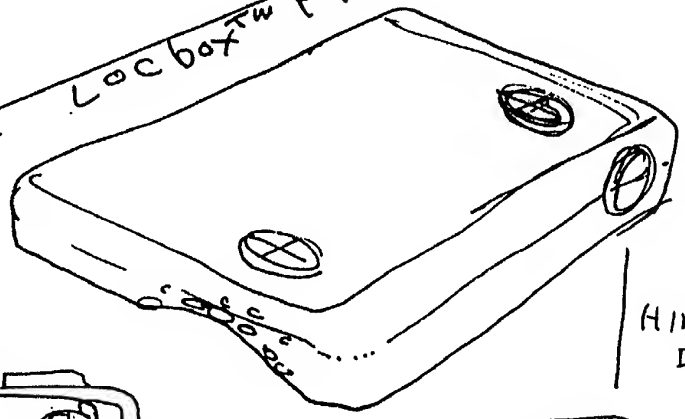


BUSINESS CARDS OR DECK OF CARDS

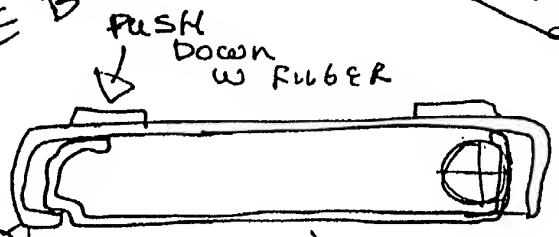


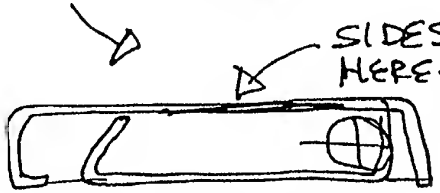
04/17/00

"FILE BOX" USING Locbox™ PROCESS



HINGE DETAIL





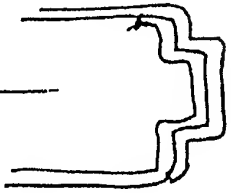
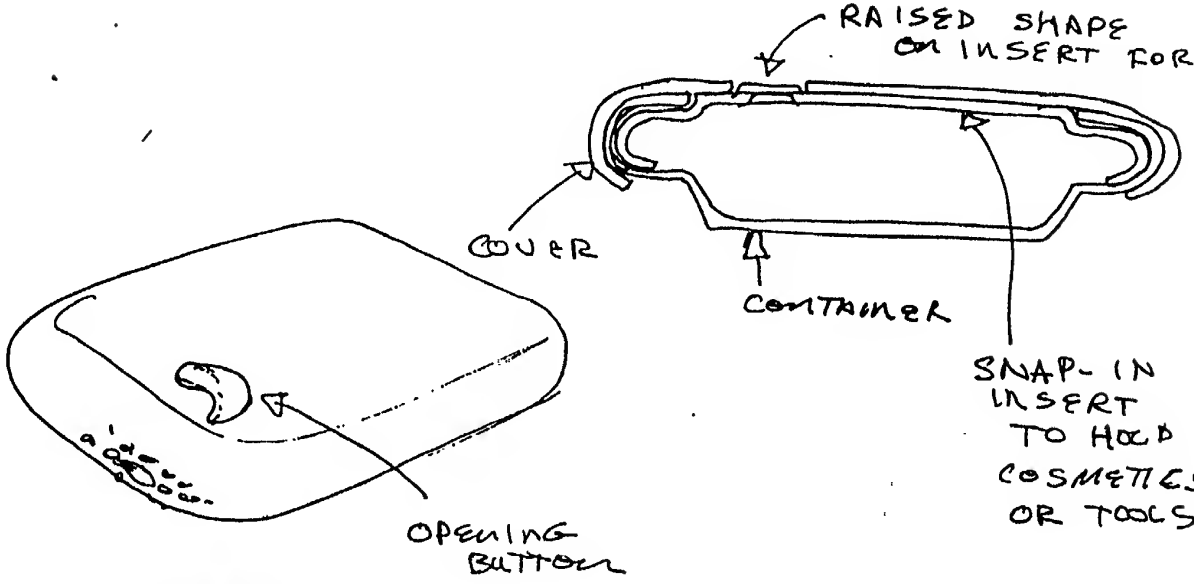
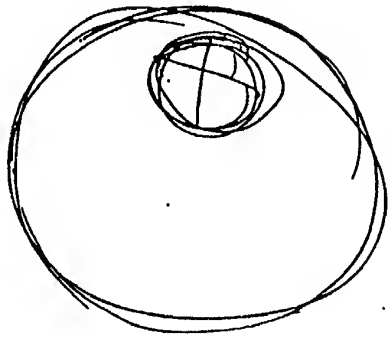


FIG. 42

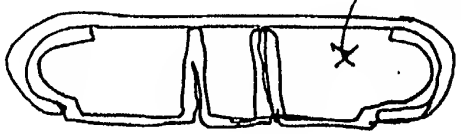


23/23

Tom O'Brien 4/17/00



ROTATING
BOX
PILL DISPENSER.



4 FOR 3/DAY
AND ONE
BLANK
(CLOSED)

OR 7 FOR
ONE WEEK + BLANK.

FIG. 4